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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,588	12/29/1999	BALWINDER S. SAMRA	17207-00005	2447

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EXAMINER
REAGAN, JAMES A

ART UNIT	PAPER NUMBER
3621	

DATE MAILED: 11/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/474,588	SAMRA ET AL.
	Examiner	Art Unit
	James A. Reagan	3621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 September 2002</u> .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6,8</u> .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

Status of Claims

1.   This action is in response to the amendment received on 09 September 2002.

2.   Claims 1-3 and 9-11 have been amended (paper #7).

3.   Claim 19 has been added (paper #7).

4.   Claims 1-19 have been examined.

5.   The rejections of claims 1-18 have been updated to reflect the amended limitations.

6.   The rejection of claim 19 is original.

Information Disclosure Statement

7.   The Information Disclosure Statements filed on 08 July 1999 (paper no. 6) and on 09 September 2002 (paper n0. 8) have been considered. Initialed copies of the Forms 1449 are enclosed herewith.

Specification

8.   The Examiner thanks the Applicant for correcting the line spacing of the specification. The previous objection s withdrawn.

Response to Arguments

9.   Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

10.   The following is a **Final Rejection** of all claims and associated limitations pending in the current application as amended in paper #7.

Examiner's note: Examiner has pointed out particular references contained in the prior art of record in the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the *entire* reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12.   Claims 1-5, 9-13, 15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melchione et al., (US 5,930,764) in view of Pham et al., (US 5,970,482).

Claim 1:

With regard to the limitation of:

o *building models of predicted customer profiles,* Melchione discloses customer profiles based on a demographic database (column 5, lines 1-2).

o *generating scores for prospective customer in the database based on the predicted customer profiles,* Melchione discloses a scoring system, models developed from customer profiles, predictions based on the customer profiles (column 42 line 51 to column 43 line 16).

Melchione does not specifically disclose *embedding the models within an online analytical processing tool.* Pham, however, in column 13, line 6 does discloses using OLAP, and in lines 39-42 also discloses building a knowledge model to predict behavior. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Melchione scoring system with Pham's OLAP system to derive the modeling features of the claimed invention. Inherently, predictive models are constructed to transform accumulated data in to knowledge models to provide better customer service, target potential customers, and to forecast changes in the account status of a current customer. Accurately mining and modeling consumer data enhances an organization's capability to maximize profits and target new business.

In addition, Melchione does not specifically disclose that *the online analytical processing tool generates the scores by combining the models.* Pham, however, in column 32, lines 29-32, discloses, "...The scoring level 2934 indicates the best candidates profiled in the results. Those scored as best may include candidates in several profiles..." H ere Pham indicates combining different profiles i.e. models. It would have been obvious to one of ordinary skill in the art at the time of the invention to build a customer profile and generate scores according to the profile to predict customer behavior because predicting customer behavior increases the likelihood of gaining new customers, thereby increasing profits.

Claims 2 and 15:

Melchione discloses a sales process support system and method for identifying sales targets using a centralized database to improve marketing success, which utilizes customer profiles and a scoring system to predict customer activity. Melchione does not disclose *generating scores for a prospective customer in the database based on the predicted customer profiles further comprises the step of using the online analytical processing tool that combines models in the form of a multidimensional structure.* Pham, however, in column 13, line 6 does discloses using OLAP, and in lines 39-42 also discloses building a knowledge model to predict behavior. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Melchione scoring system with Pham's OLAP system to derive the modeling

features of the claimed invention. Inherently, predictive models are constructed

to transform accumulated data in to knowledge models to provide better

customer service, target potential customers, and to forecast changes in the

account status of a current customer. Accurately mining and modeling consumer

data enhances an organization's capability to maximize profits and target new

business.

Claim 3:

Melchione discloses a sales process support system and method for

identifying sales targets using a centralized database to improve marketing

success, which utilizes customer profiles and a scoring system to predict

customer activity. Melchione also discloses building models of predicted

customer profiles with dimensions comprising risk, attrition, and profitability

(predicting when a customer will change banks or open a new account; column

5, lines 31-42). Melchione does not specifically disclose *generating scores for a*

prospective customer in the database based on the predicted customer profiles

further comprises the step of using the online analytical processing tool with

dimensions comprising risk, attrition, and profitability. Pham, however, in column

13, line 6 does discloses using OLAP, and in lines 39-42 also discloses building

a knowledge model to predict behavior. It would have been obvious to one of

ordinary skill in the art at the time of the invention to combine the Melchione

scoring system with Pham's OLAP system to derive the modeling features of the

claimed invention. Inherently, predictive models are constructed to transform

accumulated data in to knowledge models to provide better customer service, target potential customers, and to forecast changes in the account status of a current customer. Accurately mining and modeling consumer data enhances an organization's capability to maximize profits and target new business.

Claim 4:

With regard to the limitation of *using a propensity model to supply predicted answers to questions,* Melchione discloses propensity models that address the likelihood of a customer meeting a certain criteria such as having a child (column 43, lines 5-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to build a propensity model to predict customer behavior because predicting customer behavior increases the likelihood of gaining new customers, thereby increasing profits.

Claim 5:

With regard to the limitation of *using a propensity model to determine how likely a customer is to close an account early,* Melchione discloses predicting when a customer will "overcome inertia" and change banks or open new accounts (column 5, lines 31-42). Melchione does not specifically disclose that changing banks also includes closing an account. However, changing banks inherently implies dissatisfaction with the current bank and thus would also inherently imply closing an existing account in favor of a new one at another source. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a propensity model to predict customers leaving a bank in

favor of a new one because predicting losses in revenue provides an opportunity
to prevent the loss before it occurs.

Claim 9:

With regard to the limitation of *generating scores for a prospective customer in the database based on the predicted customer profiles further comprises the step of guiding a user to optimize marketing campaign selections based on criteria from a customer database,* Melchione discloses optimizing the use of marketing resources (column 10, lines 6-8). Melchione does not specifically disclose that the optimization is done for the benefit of a user or that the marketing resources are criteria from the customer database. However, it is inherent that any use of the database would be for the benefit of a user, and optimizing a marketing campaign would benefit any users associated with the campaign. In addition, it is inherently assumed that the marketing resources are equivalently the criteria maintained on the customer database that are used to predict customer behavior. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize data on a customer database for the benefit of the users in a marketing campaign because correctly utilizing data increases efficiency and profits.

Claim 10:

With regard to the limitation of *a customer database,* Melchione discloses a customer information database (title). With regard to the limitation of *graphical user interface for entering marketing campaign data,* Melchione discloses a

graphical interface (column 6, lines 43-46). Melchione does not specifically disclose that the GUI is used to enter marketing campaign data. However, since the data is maintained on a computer-controlled database, it is inherent that some form of graphical user interface be used to enter the data into the database. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a user interface to input data into the database because this is an easy and efficient way to enter data.

In addition, Melchione does not specifically disclose *models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool said online analytical processing tool configured to combine said models* Pham, however, in column 13, line 6 does discloses using OLAP, and in lines 39-42 also discloses building a knowledge model to predict behavior. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Melchione scoring system with Pham's OLAP system to derive the modeling features of the claimed invention. Inherently, predictive models are constructed to transform accumulated data in to knowledge models to provide better customer service, target potential customers, and to forecast changes in the account status of a current customer. Accurately mining and modeling consumer data enhances an organization's capability to maximize profits and target new business. Furthermore, Pham, in column 32, lines 29-32, discloses, "…The scoring level 2934 indicates the best candidates profiled in the results. Those scored as best may include candidates in several profiles…" here

Pham indicates combining different profiles i.e. models. It would have been obvious to one of ordinary skill in the art at the time of the invention to build a customer profile and generate scores according to the profile to predict customer behavior because predicting customer behavior increases the likelihood of gaining new customers, thereby increasing profits.

Claim 11:

Melchione discloses a sales process support system and method for identifying sales targets using a centralized database to improve marketing success, which utilizes customer profiles and a scoring system to predict customer activity. Melchione does not disclose *models are embedded in said online analytical processing tool that takes the form of a multidimensional structure* Pham, however, in column 13, line 6 does discloses using OLAP, and in lines 39-42 also discloses building a knowledge model to predict behavior. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Melchione scoring system with Pham's OLAP system to derive the modeling features of the claimed invention. Inherently, predictive models are constructed to transform accumulated data in to knowledge models to provide better customer service, target potential customers, and to forecast changes in the account status of a current customer. Accurately mining and modeling consumer data enhances an organization's capability to maximize profits and target new business.

Claim 12:

With regard to the limitation of *models of predicted customer profiles further comprise a propensity model used to supply predicted answers to questions,* Melchione discloses propensity models that address the likelihood of a customer meeting a certain criteria such as having a child (column 43, lines 5-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to build a propensity model to predict customer behavior because predicting customer behavior increases the likelihood of gaining new customers, thereby increasing profits.

Claim 13:

With regard to the limitation of *propensity model determines how likely a customer is to close an account early,* Melchione discloses predicting when a customer will "overcome inertia" and change banks or open new accounts (column 5, lines 31-42). Melchione does not specifically disclose that changing banks also includes closing an account. However, changing banks inherently implies dissatisfaction with the current bank and thus would also inherently imply closing an existing account in favor of a new one at another source. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a propensity model to predict customers leaving a bank in favor of a new one because predicting losses in revenue provides an opportunity to prevent the loss before it occurs.

Claim 18:

With regard to the limitation of *guide a user to optimize marketing campaign selections based on criteria from a customer database,* Melchione discloses optimizing the use of marketing resources (column 10, lines 6-8). Melchione does not specifically disclose that the optimization is done for the benefit of a user or that the marketing resources are criteria from the customer database. However, it is inherent that any use of the database would be for the benefit of a user, and optimizing a marketing campaign would benefit any users associated with the campaign. In addition, it is inherently assumed that the marketing resources are equivalently the criteria maintained on the customer database that are used to predict customer behavior. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize data on a customer database for the benefit of the users in a marketing campaign because correctly utilizing data increases efficiency and profits.

Claim 19:

With regard to the limitation of *building models of predicted customer profiles,* Melchione discloses customer profiles based on a demographic database (column 5, lines 1-2).

Melchione does not specifically disclose *embedding the models within an online analytical processing tool.* Pham, however, in column 13, line 6 does discloses using OLAP, and in lines 39-42 also discloses building a knowledge model to predict behavior. It would have been obvious to one of ordinary skill in

the art at the time of the invention to combine the Melchione scoring system with

Pham's OLAP system to derive the modeling features of the claimed invention.

Inherently, predictive models are constructed to transform accumulated data in to

knowledge models to provide better customer service, target potential customers,

and to forecast changes in the account status of a current customer. Accurately

mining and modeling consumer data enhances an organization's capability to

maximize profits and target new business.

In addition, Melchione discloses a scoring system, models developed from

customer profiles, and predictions based on the customer profiles (column 42,

line 51 to column 43, line 16). Melchione does not specifically disclose

generating scores for a prospective customer in the database based on the

predicted customer profiles wherein the online analytical processing tool

determines a sequential order for combining the models and generates the

scores by combining the models. Pham, however, in column 32, lines 24-36

discloses "...the ranking of the output results..." and "Those scored as best may

include candidates in several profiles and are not, therefore, a conventional

numeric ranking from best to worst." Here Pham shows not only a traditional

sequential ranking based on numerical scoring, but also discloses alternative

methods or sequential ranking. It would have been obvious to one of ordinary

skill in the art at the time of the invention to rank the scores sequentially because

"Scoring in data mining gives the comparison between each possible output

result and the discrimination level between them" (Pham, column 32, lines 31-33).

13.   Claims 6-8, 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melchione/Pham in view of Sheppard, (US 6,026,397).

Claims 6 and 14:

Melchione/Pham disclose a sales process support system and method for identifying sales targets using a centralized database to improve marketing success, customer profiles, a scoring system to predict customer activity, and propensity models. Melchione/Pham do not disclose determining *how likely a customer is to default on an account*. Sheppard, however, in column 2, lines 44-51 does discloses the probability of attrition i.e. default. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Melchione/Pham predicting and scoring system with Sheppard's probability of default to derive the modeling features of the claimed invention. Inherently, predictive models are constructed to transform accumulated data in to knowledge models to provide better customer service, target potential customers, and to forecast changes in the account status of a current customer. Accurately predicting negative behavior in an existing account enables the account manager to prepare and possibly avoid detrimental activities and ensures profitability.

Claims 7 and 16:

Melchione/Pham disclose a sales process support system and method for identifying sales targets using a centralized database to improve marketing success, customer profiles, a scoring system to predict customer activity, and propensity models. Melchione/Pham do not disclose *a behavior prediction model to estimate risk*. Sheppard, however, in column 2, lines 44-51 does discloses predicting customer behavior, profitability and associated risks. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Melchione/Pham predicting and scoring system with Sheppard's behavior propensity models derive the prediction features of the claimed invention. Inherently, predictive models are constructed to transform accumulated data in to knowledge models to provide better customer service, target potential customers, and to forecast changes in the account status of a current customer. Accurately predicting negative behavior in an existing account enables the account manager to prepare and possibly avoid detrimental activities and ensures profitability by providing a technical advantage.

Claims 8 and 17:

Melchione/Pham disclose a sales process support system and method for identifying sales targets using a centralized database to improve marketing success, customer profiles, a scoring system to predict customer activity, and propensity models. Melchione/Pham do not disclose *using a client prospecting model for business development*. Sheppard, however, in column 2, lines 28-38

does discloses predicting and identifying customers, and developing profiles based on demographics and behavior. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the Melchione/Pham predicting and scoring system with Sheppard's lead-forecasting models to derive the prediction features of the claimed invention. Inherently, identifying and developing leads is a primary concern when designing a marketing program that specifically targets new business clients and customers based on a demographic.

Conclusion

14.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **James A. Reagan** whose telephone number is **(703) 306-9131**. The examiner can normally be reached on Monday-Friday, 9:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **James Trammell** can be reached at (703) 305-9768.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Receptionist** whose telephone number is **(703) 305-3900**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 305-7687 [Official communications; including

After Final communications labeled "Box AF"]

(703) 308-1396 [Informal/Draft communications, labeled "PROPOSED" or "DRAFT"]

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, 7th floor receptionist.

JAR

02 November 2002

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